

Fig. 1

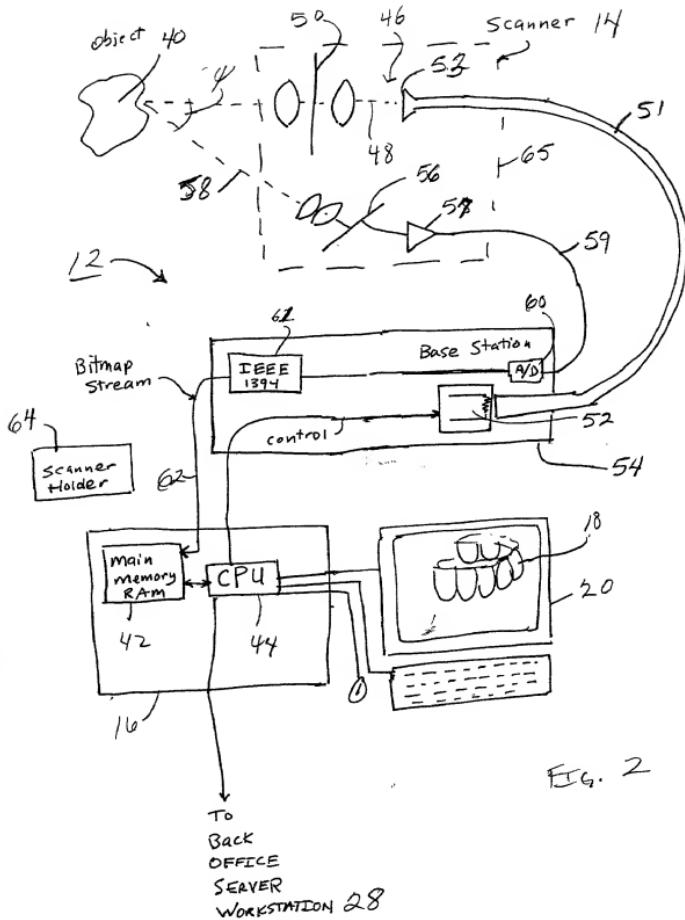


FIG. 2

Fig. 3

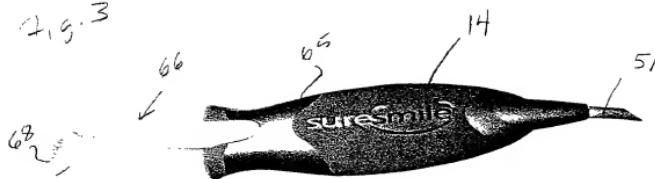
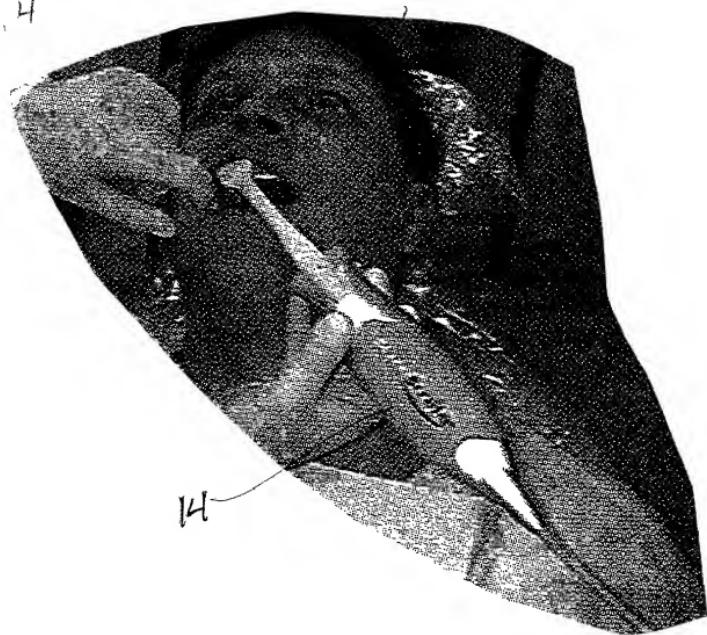


Fig. 4



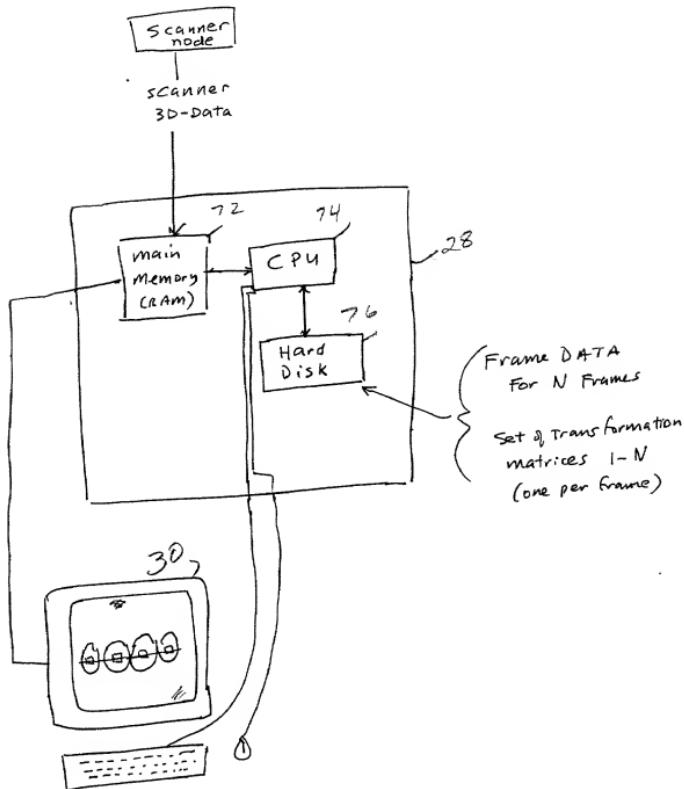


Fig. 5

3-Dimensional IMAGE CAPTURE
(per frame)

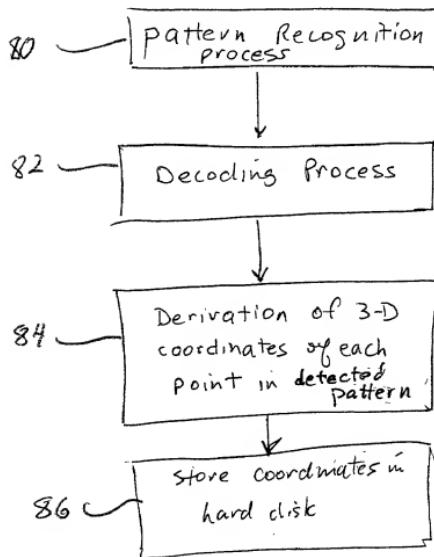


Fig. 6

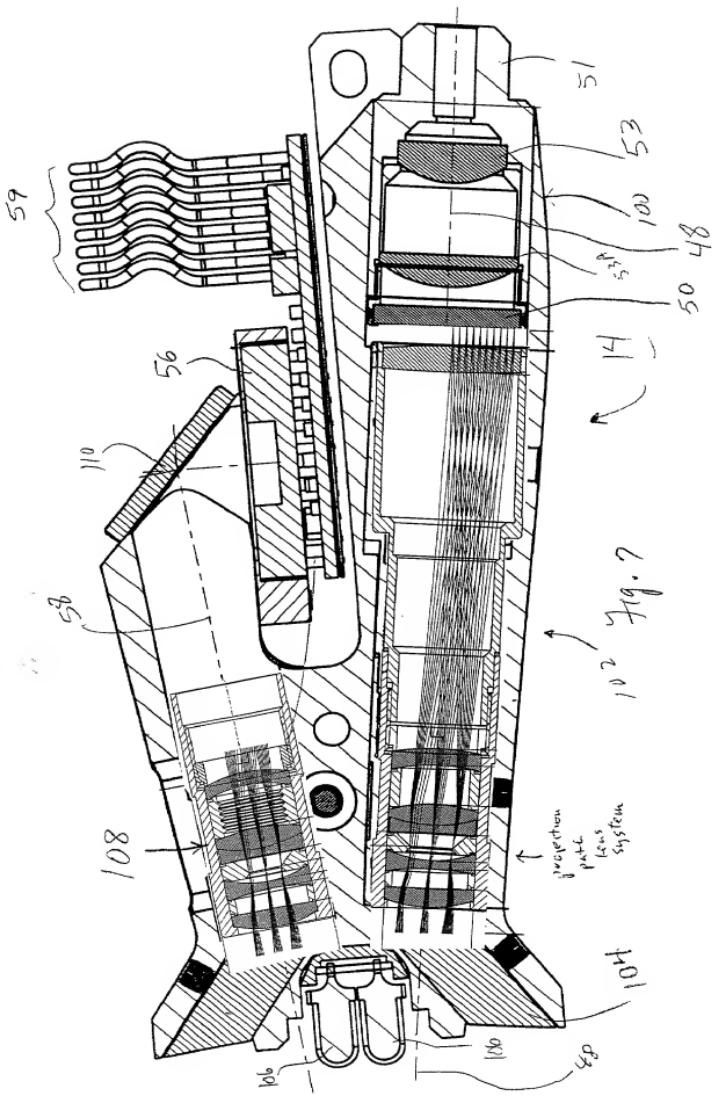
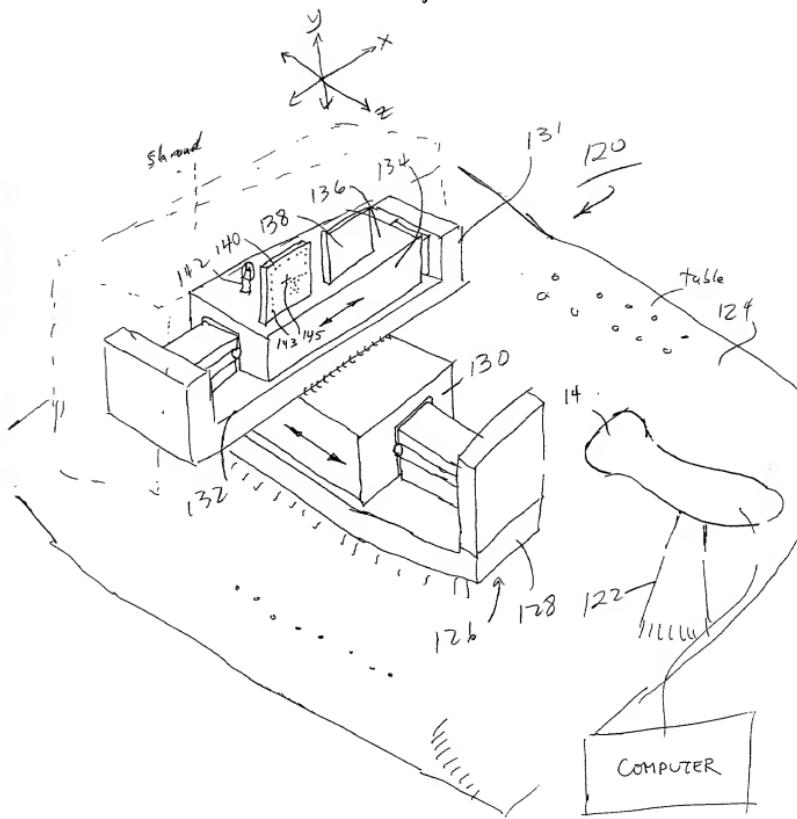


Fig. 8



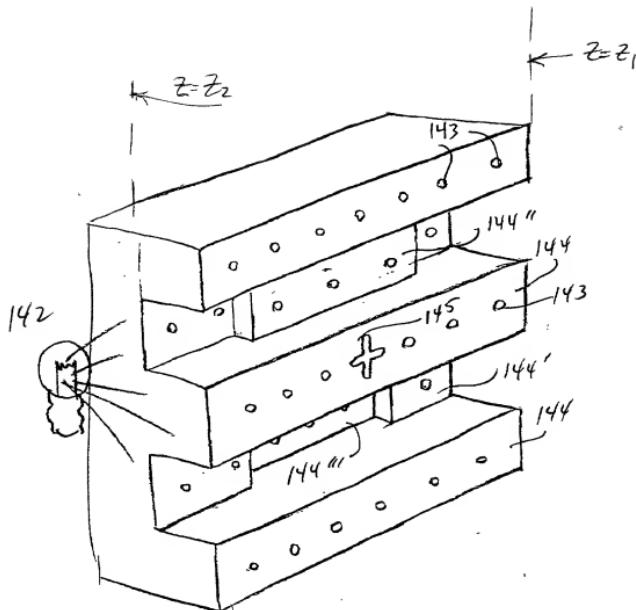


Fig. 8A

Fig. 9

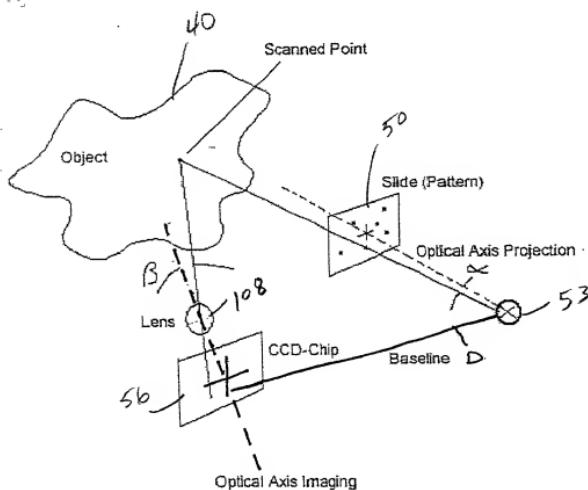


Fig. 9B

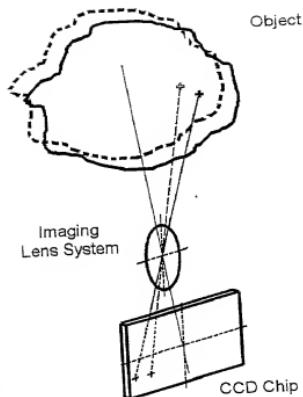


Fig. 9A

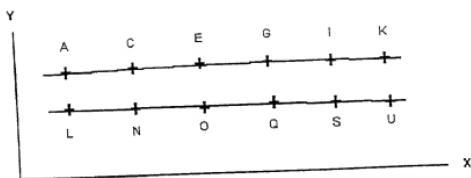
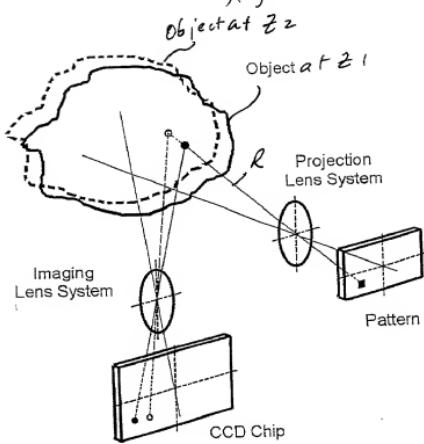
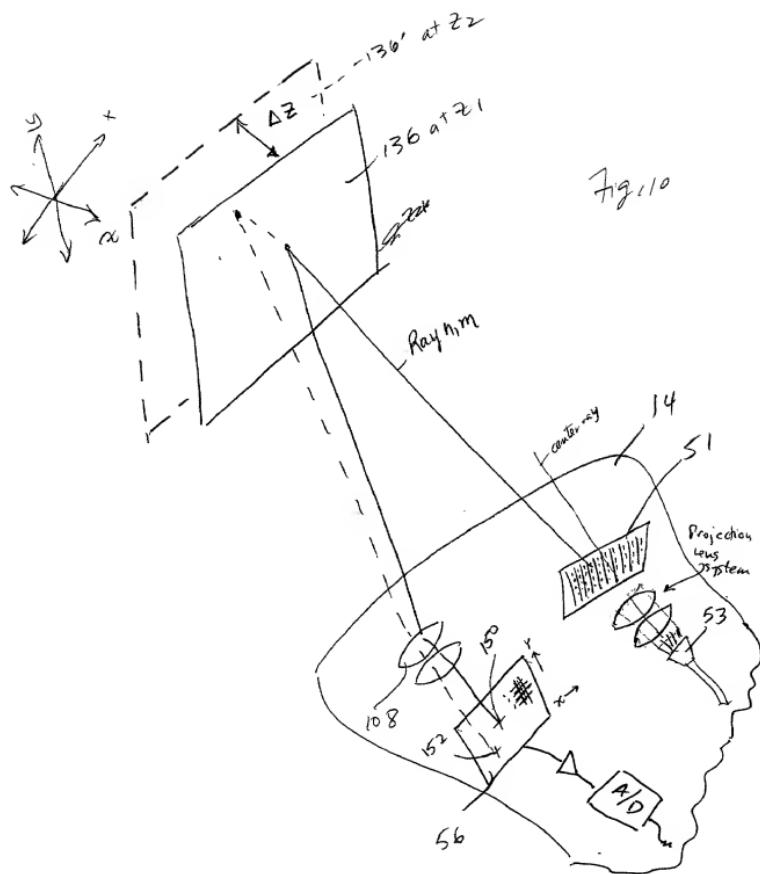
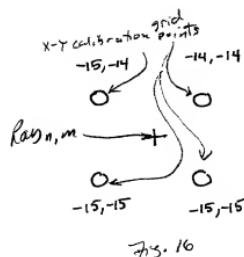
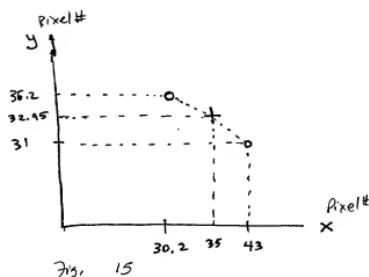
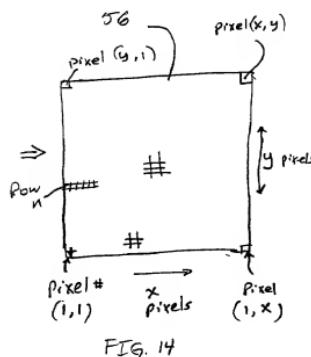
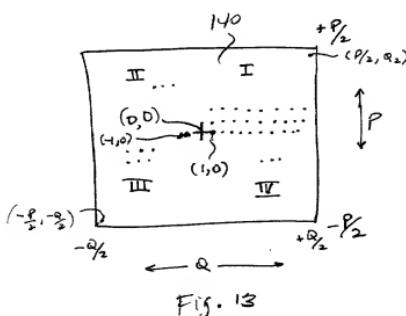
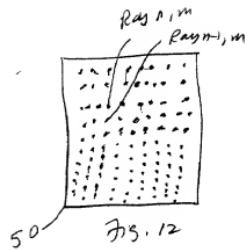
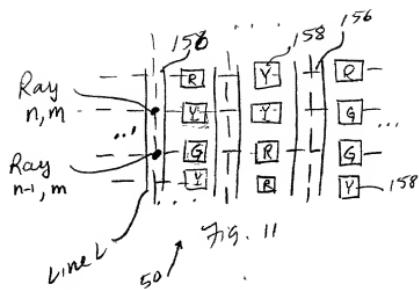


Fig. 9C

Pixel coordinates for portions of the pattern assigned to a certain Z-level





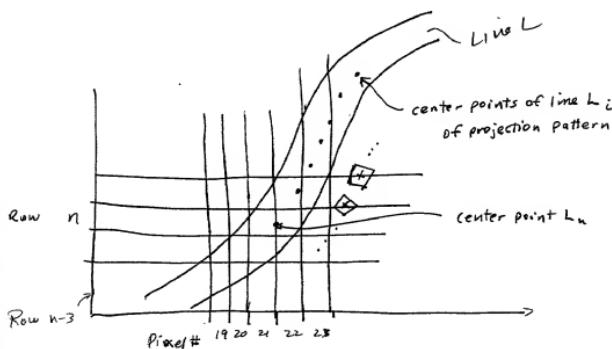
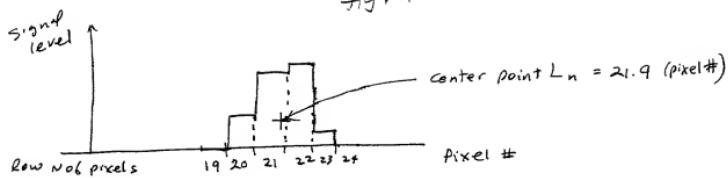


Fig. 18

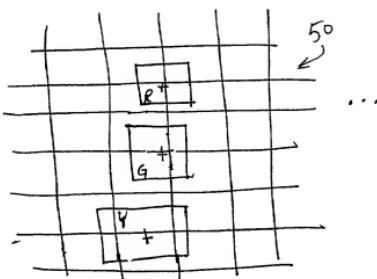


Fig. 19

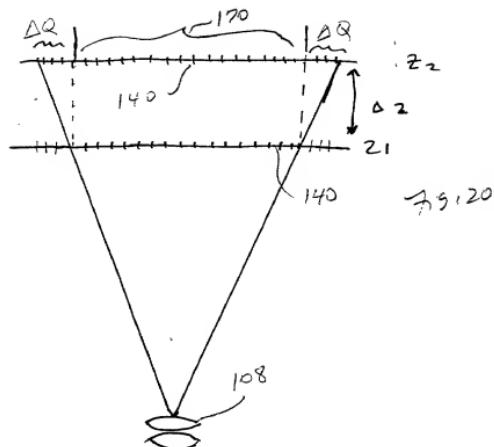
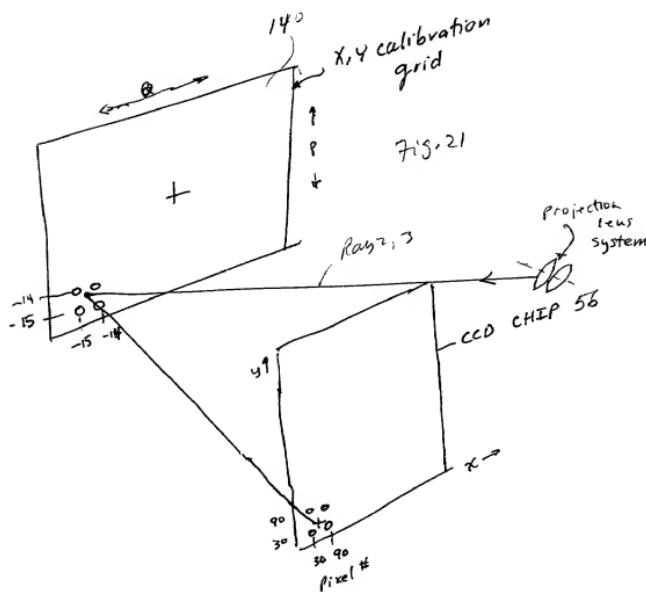


FIGURE 20: FOCUSING GEOMETRY



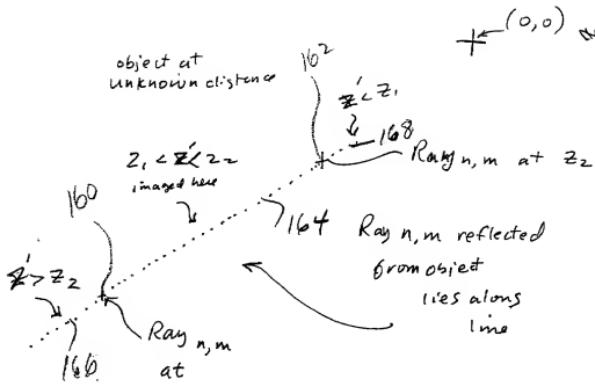
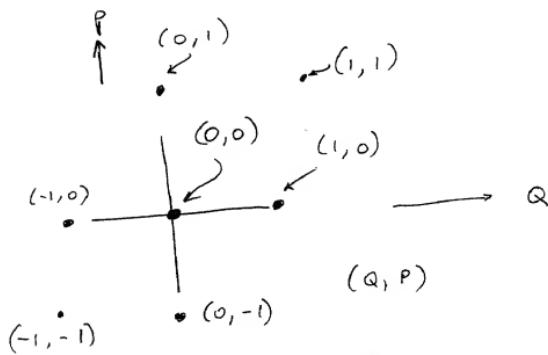
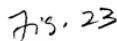


Fig. 22



$CCD_x, CCD_y = \text{pixel } \# \text{, insubpixel resolution}$

Fig. 24

Calibration Table #1

		Line 1		Line 2		Line N	
		Row 1	Row 2	Row 3	Row 4	Row 1	Row 2
<u>CCD X</u>	1.0	1.1	1.5	2.1	...	2.71	2.95
<u>mm</u>						30.2	37.1
<u>Distance</u>							
<u>CCD Y</u>	10.2	20.4	32.8	44.5	...	11.5	21.67
<u>mm</u>						36.2	44
<u>Distance</u>							
<u>CCD X</u>	3.9	4.5	6.8	12.2	...	34.0	41.1
<u>mm</u>						43.0	46
<u>Distance</u>							
<u>CCD Y</u>	12.1	21.5	30.4	46.3	...	13.2	21.8
<u>mm</u>						31.0	49.1
<u>Distance</u>							
<u>Z₁</u>							
<u>Z₂</u>							

(Q, P)

Quadrant I		Quadrant II		Quadrant III		Quadrant IV	
		$\frac{Row_0}{Row_1}$	$\frac{Row_1}{Row_2}$	$\frac{Row_2}{Row_3}$	$\frac{Row_3}{Row_4}$	$\frac{Row_4}{Row_5}$	$\frac{Row_5}{Row_6}$
$(0,0)$	$(1,0)$	$(2,0)$	$(3,0)$	$(4,0)$	$(5,0)$	$(6,0)$	$(7,0)$
2_1	$CCDX$	640.1	700.2	760.5	820.8	880.2	940.5
2_1	$CCDY$	640.1	640.1	640.3	640.4	640.5	640.6
2_2	$CCDX$	640.2	640.3	640.4	640.5	640.6	640.7
2_2	$CCDY$	640.2	640.3	640.1	640.1	640.2	640.3

Quadrant II

Quadrant I		Quadrant II		Quadrant III		Quadrant IV	
		$\frac{Row_0}{Row_1}$	$\frac{Row_1}{Row_2}$	$\frac{Row_2}{Row_3}$	$\frac{Row_3}{Row_4}$	$\frac{Row_4}{Row_5}$	$\frac{Row_5}{Row_6}$
$(-1,0)$	$(-2,0)$	$(-3,0)$	$(-4,0)$	$(-5,0)$	$(-6,0)$	$(-7,0)$	$(-8,0)$
2_1	$CCDX$	640.1	640.2	640.3	640.4	640.5	640.6
2_1	$CCDY$	640.1	640.1	640.3	640.4	640.5	640.6
2_2	$CCDX$	640.2	640.3	640.1	640.1	640.2	640.3
2_2	$CCDY$	640.2	640.3	640.1	640.1	640.2	640.3

Quadrant III

Quadrant I		Quadrant II		Quadrant III		Quadrant IV	
		$\frac{Row_0}{Row_1}$	$\frac{Row_1}{Row_2}$	$\frac{Row_2}{Row_3}$	$\frac{Row_3}{Row_4}$	$\frac{Row_4}{Row_5}$	$\frac{Row_5}{Row_6}$
$(1,0)$	$(2,0)$	$(3,0)$	$(4,0)$	$(5,0)$	$(6,0)$	$(7,0)$	$(8,0)$
2_1	$CCDX$	640.1	640.2	640.3	640.4	640.5	640.6
2_1	$CCDY$	640.1	640.1	640.3	640.4	640.5	640.6
2_2	$CCDX$	640.2	640.3	640.1	640.1	640.2	640.3
2_2	$CCDY$	640.2	640.3	640.1	640.1	640.2	640.3

Quadrant III

2_1	$CCDX$	640.1	640.1	640.1	640.1	640.1	640.1
2_1	$CCDY$	640.1	640.1	640.1	640.1	640.1	640.1
2_2	$CCDX$	640.2	640.3	640.1	640.1	640.2	640.3

Quadrant IV

2_1	$CCDX$	640.1	640.1	640.1	640.1	640.1	640.1
2_1	$CCDY$	640.1	640.1	640.1	640.1	640.1	640.1
2_2	$CCDX$	640.2	640.3	640.1	640.1	640.2	640.3

Quadrant IV

$CCD_x, CCD_y = \text{Pixel } \# \text{, in subpixel resolution}$

Calibration Table #1 (after)

Pattern Line 1	Pattern Line 2	Line N			
		Row 1	Row 2	Row 3	Row 4
CCD_x	1.0	1.1	1.5	2.1	...
mm					
Distance					
CCD_y	10.2	20.4	32.8	44.5	...
mm					
Distance					
Z_1	3.9	4.5	6.8	12.2	...
mm					
dist.					
Z_2	12.1	21.5	30.4	46.3	...
mm					
dist.					

after

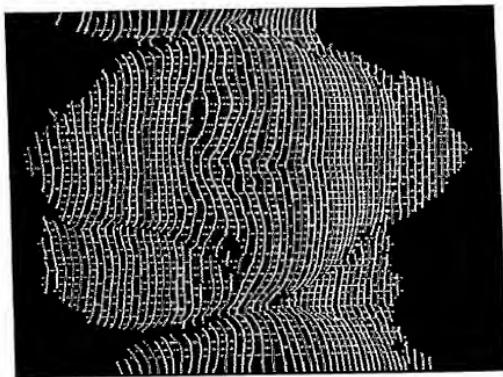


Fig. 28

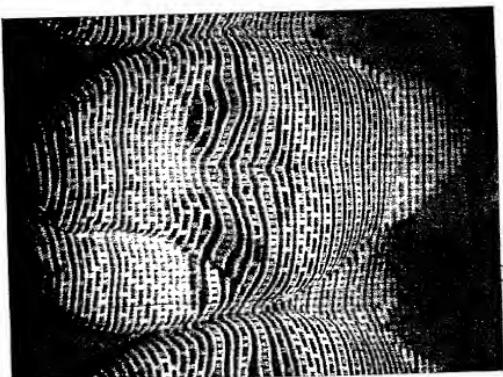


Fig. 27



FIG. 29

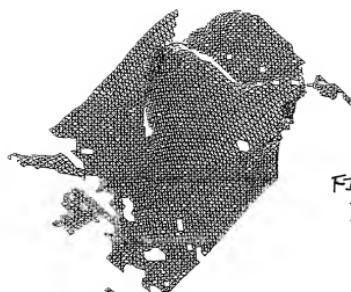


FIG.
30



FIG. 31

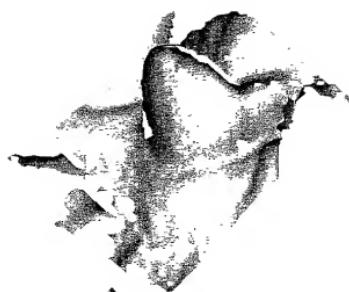


FIG. 32



FIG. 33

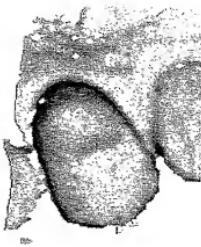
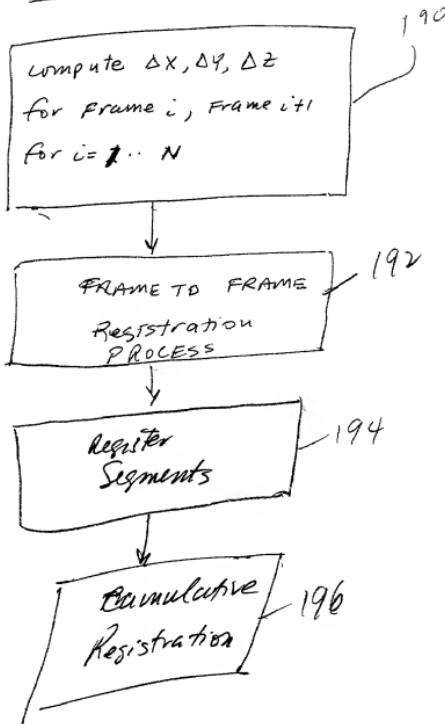


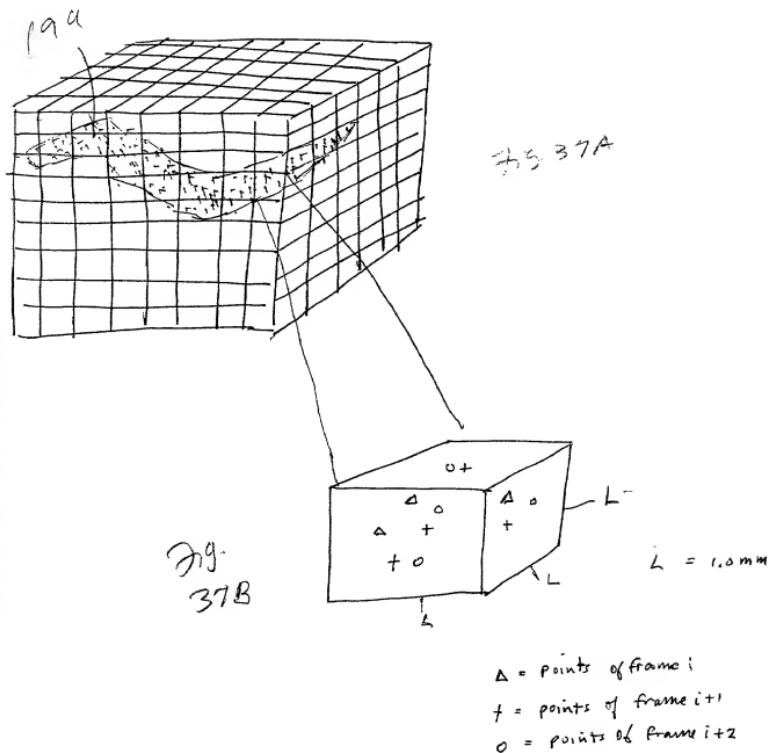
FIG. 34



FIG.
35

29.36

Registration



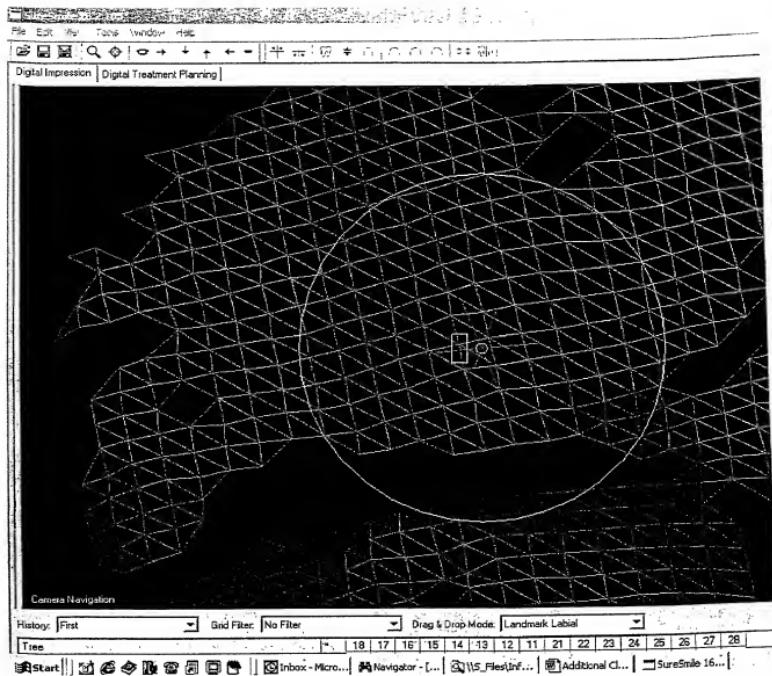
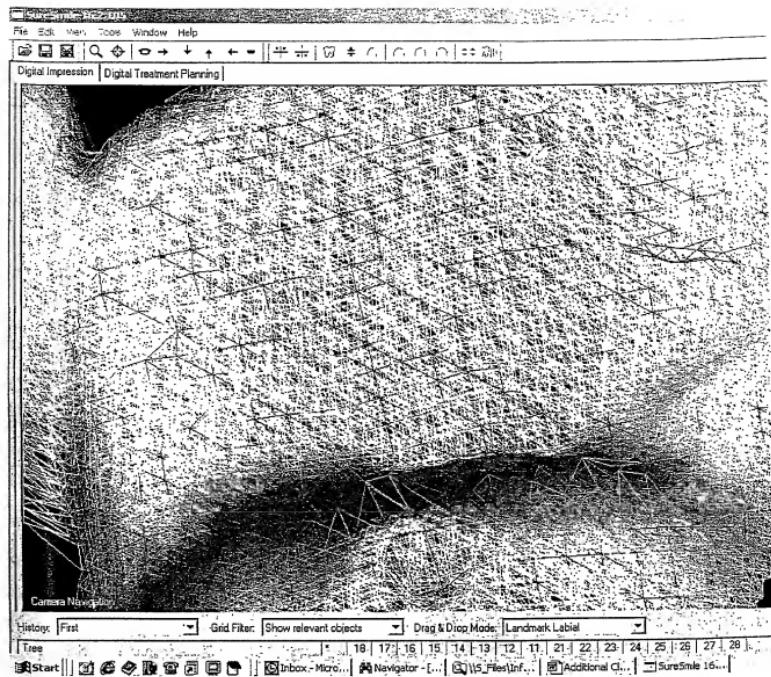


Figure 37c



75-320

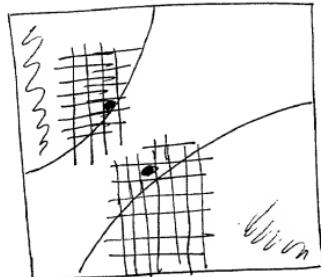


Fig. 38A

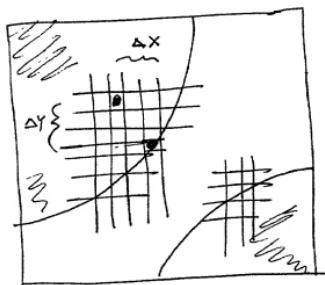
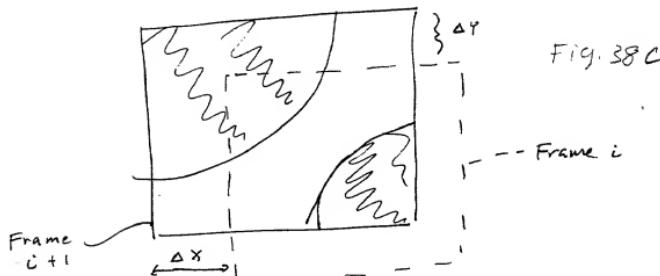
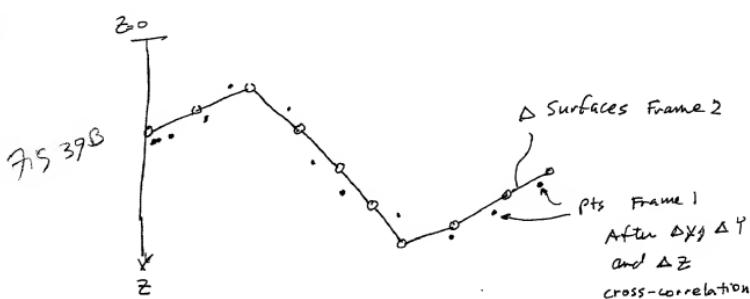
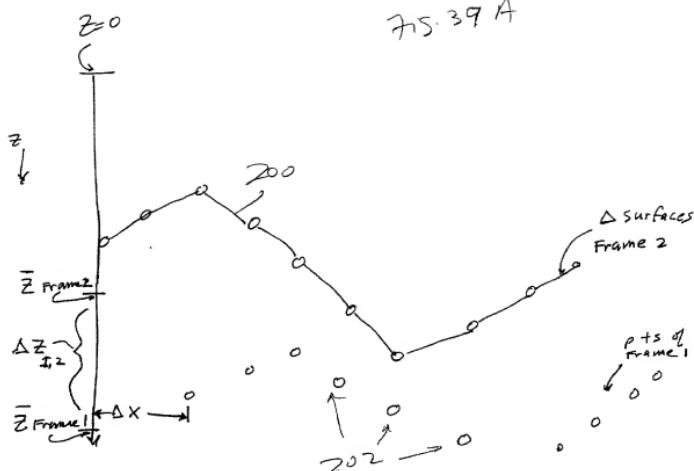
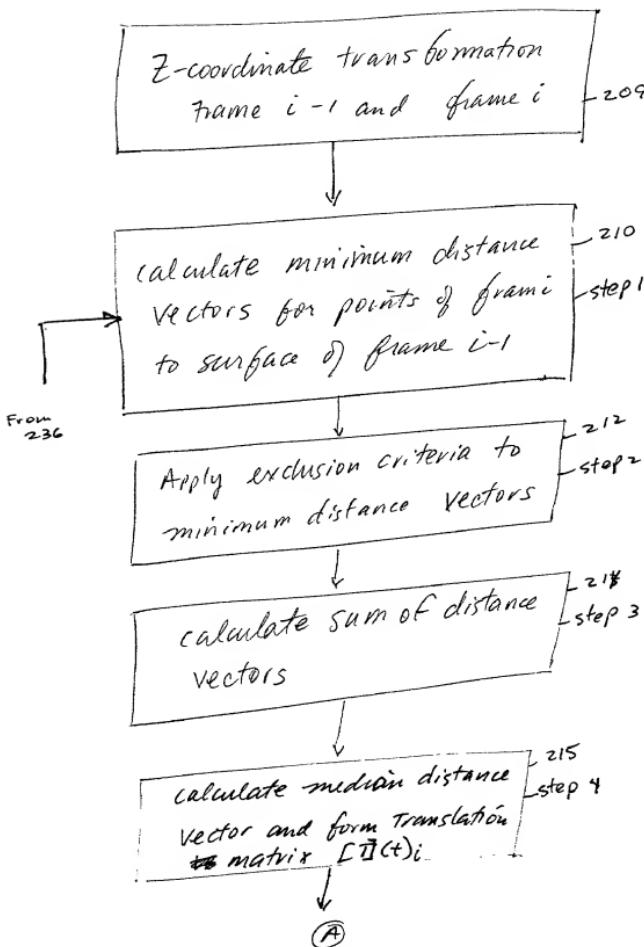
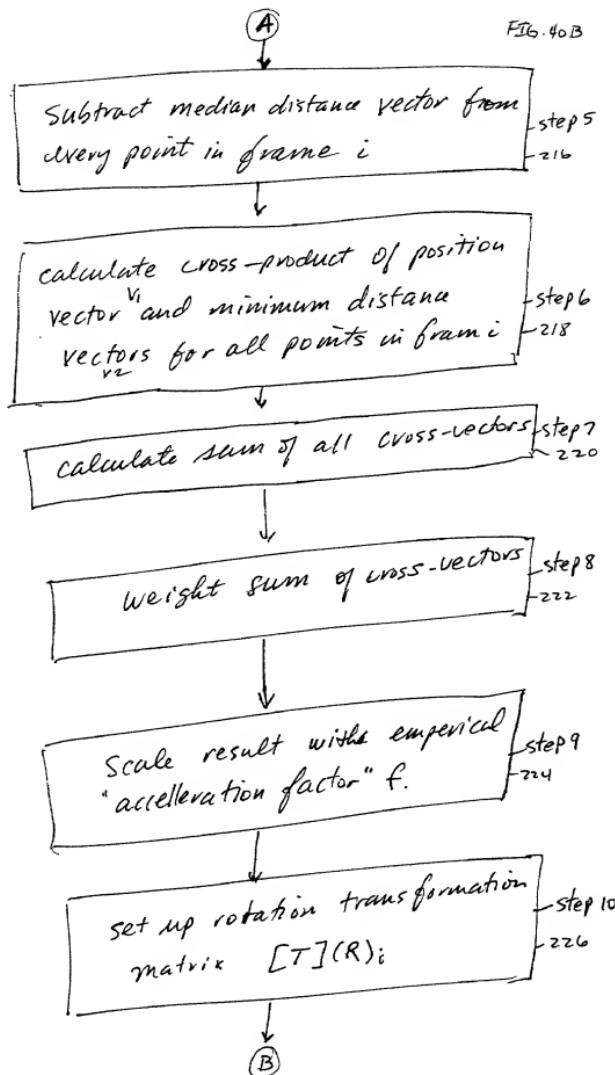


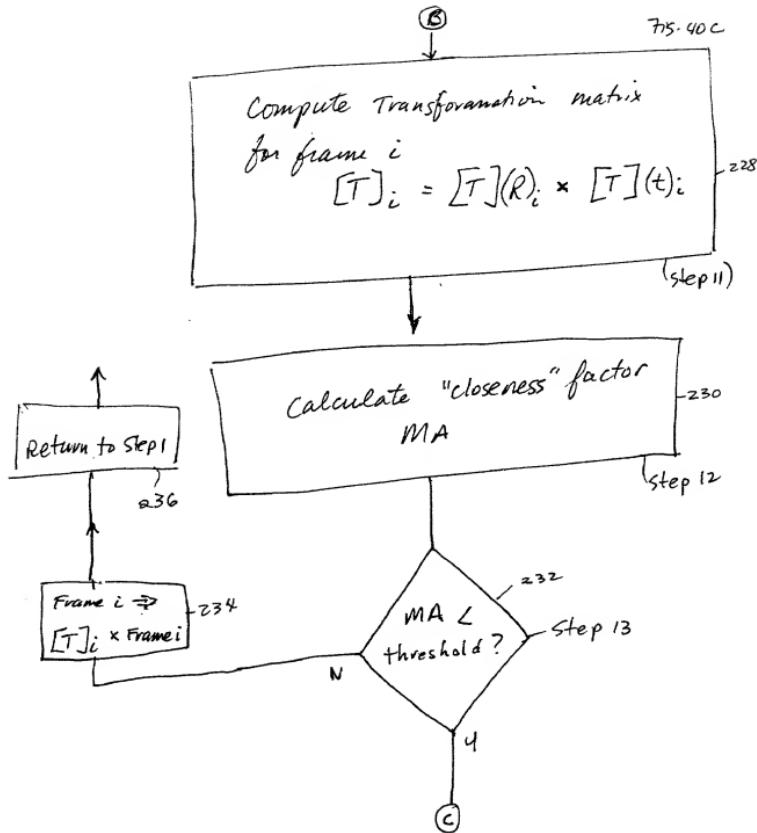
Fig. 38B











Frame to
frame
registration

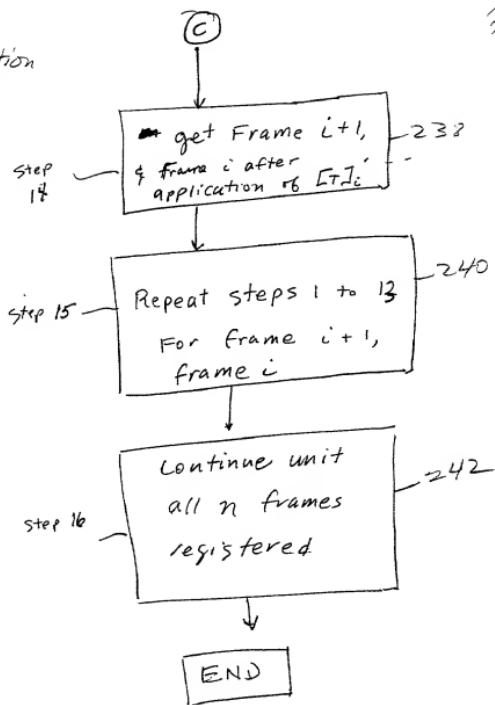


Fig. 40 D

Fig. 41

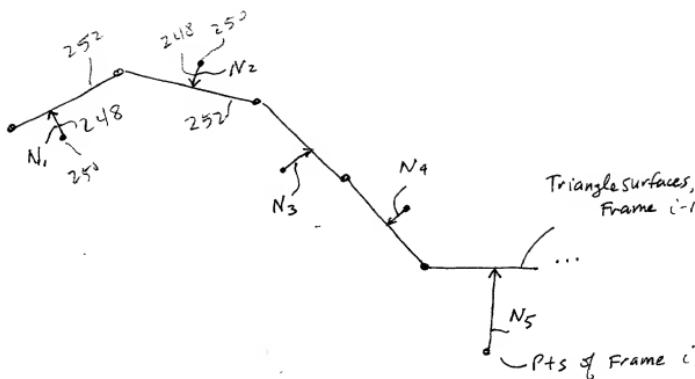


Fig. 42

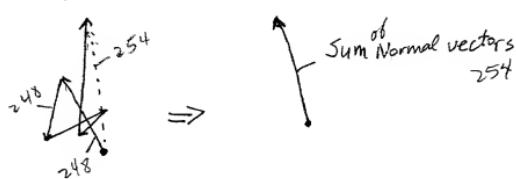


Fig. 43

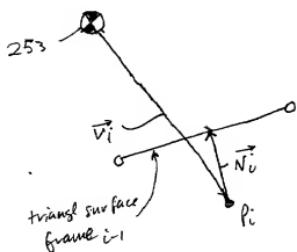
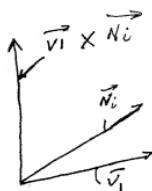


Fig. 44



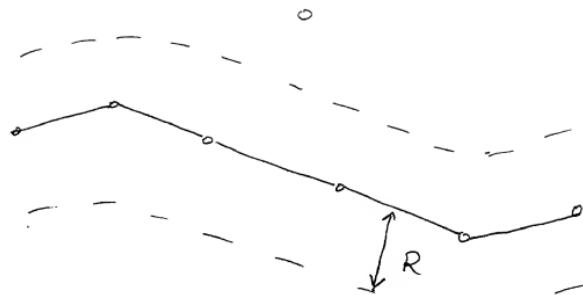


Fig. 45

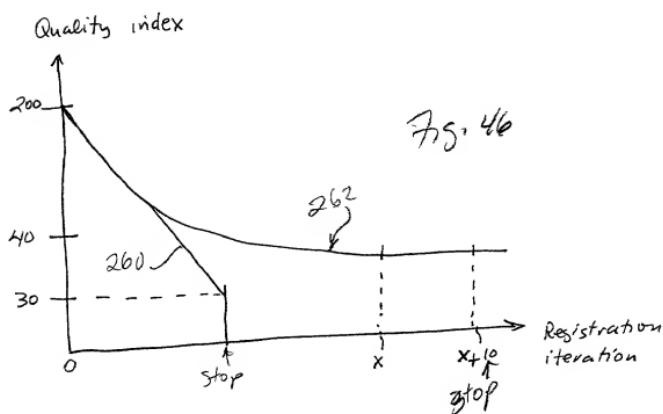
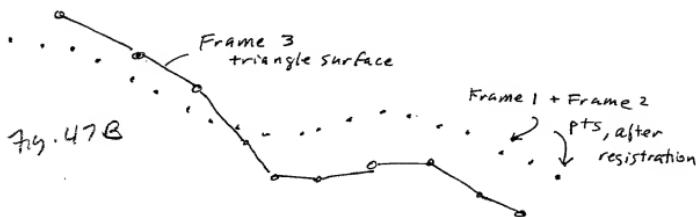
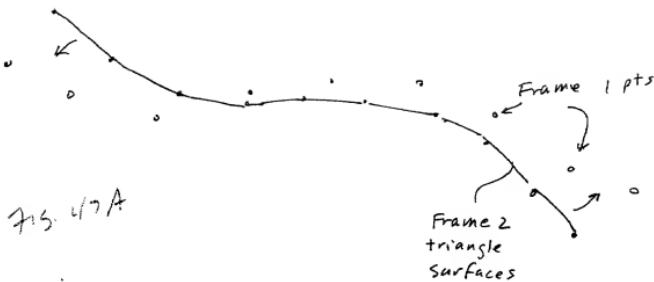


Fig. 46



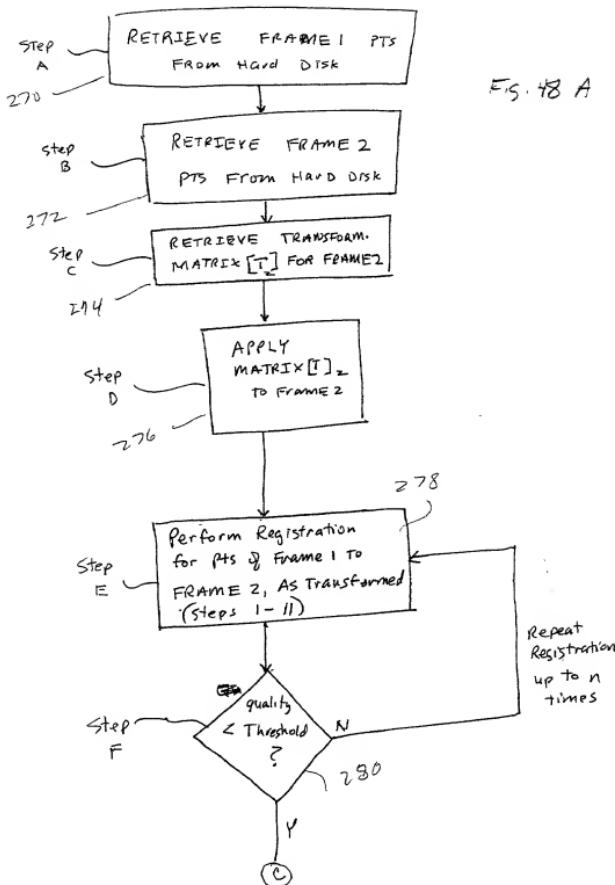
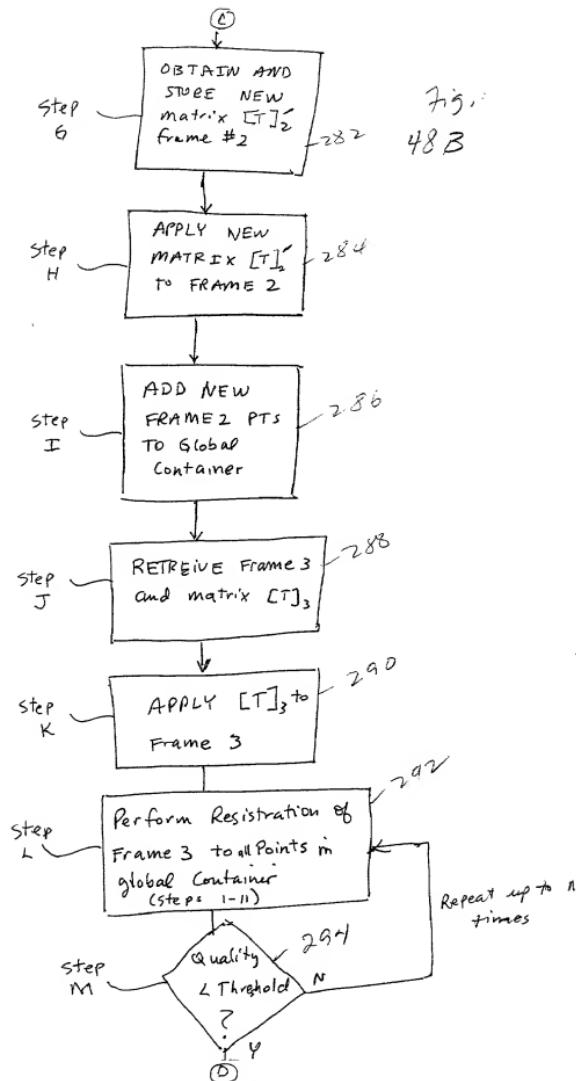
Cumulative
Registration

FIG. 48 A

Cumulative
registrationFig:
48B

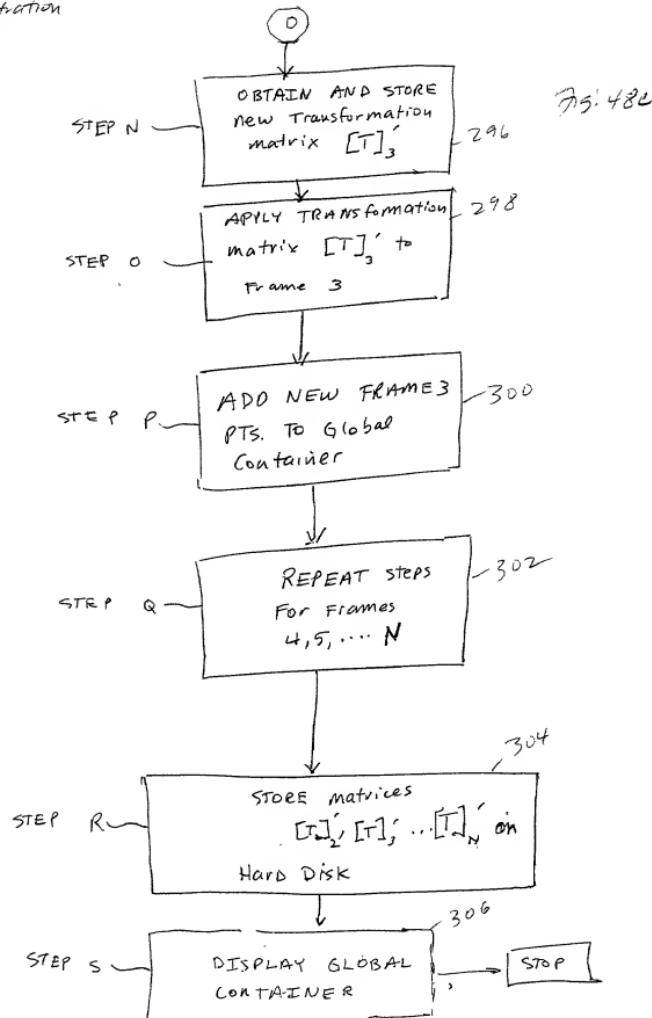
Cumulative
registration

Fig. 48c

Fig. 49

12	F1
10	F2
2	F3
3	F4
9	F5
6	F6
1	F7
7	F8
13	F9
11	F10
4	F11
5	F12
8	F13

	Frame 1	Frame 2
1	x y 2	1 y 2
2	x y z	2 y z
3	x y z	3 y z
4	x y z	4 y z
...
N	x y z	n' y z

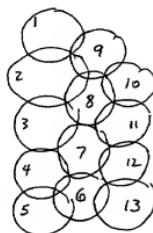


Fig. 50

Fig. 51

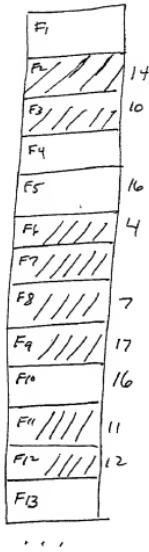


Fig. 52

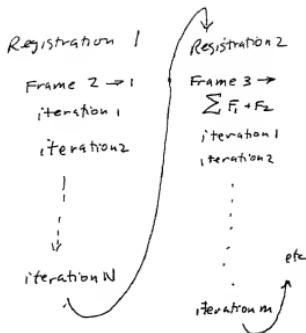


Fig. 53

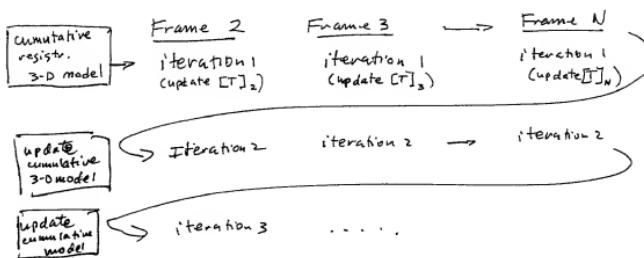


FIG. 54

<input checked="" type="radio"/> Single	<input type="radio"/> Cumulative	<input type="radio"/> Single	<input type="radio"/> Cumulative
X	Y	X	Y
0.00 0.00 0.00	2.00 0.00 0.00	0.00 0.00 0.00	2.00 0.00 0.00
3.00 0.00 0.00	3.00 0.00 0.00	3.00 0.00 0.00	3.00 0.00 0.00
0.00 3.00 0.00	0.00 3.00 0.00	0.00 3.00 0.00	0.00 3.00 0.00
0.00 -3.00 0.00		0.00 -3.00 0.00	
Registration (0.00)	Registration (0.00 + line)	Registration (line)	Registration (line)
Distance limit [SYX]	[250.000, y]	Distance limit [SYX]	[50.000 y]
Stationary count	5	Final distance	[40.000 y]
Drill site		Stationary count	[10]
Minimum quota of active points	[0.11]	Radius [SYX]	[0.500 mm]
Maximum single size [length changes are treated as gaps]	[2.000 mm]	Convergence	[0.010]
Maximum edge length [length budget (new no attrition)]	[1.800 mm]	Number of points to legitimate	[400]
Maximum count of unsuccessful files (new segment is started when exceeded)	[2]	Acceleration factor	[1.3]
Convergence [0.10]			
Number of points to legitimate	[400]		
Acceleration factor	[16]		
Cell size	[20]		
Count of SYX surfaces (or simulation [0.50])			
Merging			
Radius of single initial weight to replace	[0.500 mm]	Minimal triangle plane size or closing plane	[0.010]
Maximal count of edge lines for closing gaps	[16]	Minimal edge length for closing gaps	[1500 mm]
		Minimal distance from edge of base quantity	[0.400 mm]
		Minimal distance from edge of base quantity	[0.000 mm]
16			
0.00			

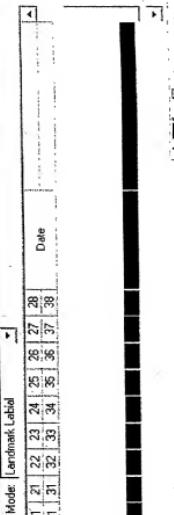
Tree	First	Guide Filter	No Filter
<input checked="" type="checkbox"/> Flame_01_043	18	17	16
<input type="checkbox"/> Flame_01_044	15	14	13
<input type="checkbox"/> Flame_01_045	21	22	23
<input type="checkbox"/> Flame_01_046	41	42	43
<input checked="" type="checkbox"/> Flame_01_047	49	47	46
<input type="checkbox"/> Flame_01_048	45	44	43
<input type="checkbox"/> Flame_01_049	43	42	41
<input type="checkbox"/> Flame_01_050	31	32	33
<input type="checkbox"/> Flame_01_051	30	31	32
<input type="checkbox"/> Flame_01_052	29	30	31
<input type="checkbox"/> Flame_01_053	28	29	30
<input type="checkbox"/> Flame_01_054	27	28	29
<input type="checkbox"/> Flame_01_055	26	27	28
<input type="checkbox"/> Flame_01_056	25	26	27
<input type="checkbox"/> Flame_01_057	24	25	26
<input type="checkbox"/> Flame_01_058	23	24	25
<input type="checkbox"/> Flame_01_059	22	23	24
<input type="checkbox"/> Flame_01_060	21	22	23
<input type="checkbox"/> Flame_01_061	20	21	22
<input type="checkbox"/> Flame_01_062	19	20	21
<input type="checkbox"/> Flame_01_063	18	19	20
<input type="checkbox"/> Flame_01_064	17	18	19
<input type="checkbox"/> Flame_01_065	16	17	18
<input type="checkbox"/> Flame_01_066	15	16	17
<input type="checkbox"/> Flame_01_067	14	15	16
<input type="checkbox"/> Flame_01_068	13	14	15
<input type="checkbox"/> Flame_01_069	12	13	14
<input type="checkbox"/> Flame_01_070	11	12	13
<input type="checkbox"/> Flame_01_071	10	11	12
<input type="checkbox"/> Flame_01_072	9	10	11
<input type="checkbox"/> Flame_01_073	8	9	10
<input type="checkbox"/> Flame_01_074	7	8	9
<input type="checkbox"/> Flame_01_075	6	7	8
<input type="checkbox"/> Flame_01_076	5	6	7
<input type="checkbox"/> Flame_01_077	4	5	6
<input type="checkbox"/> Flame_01_078	3	4	5
<input type="checkbox"/> Flame_01_079	2	3	4
<input type="checkbox"/> Flame_01_080	1	2	3
<input type="checkbox"/> Flame_01_081	0	1	2



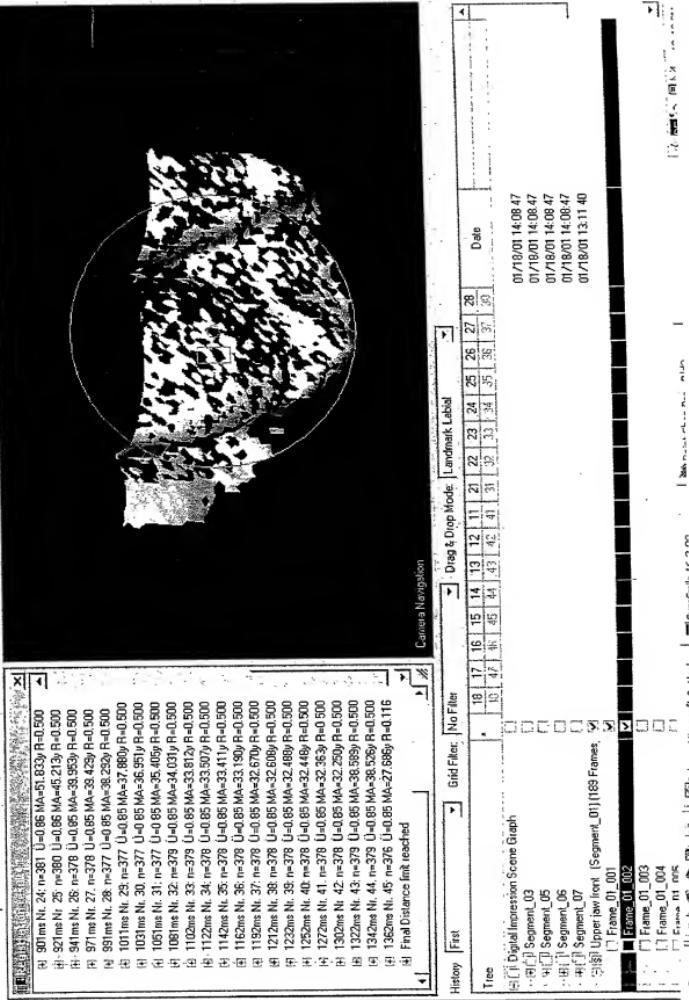
Fig. 55

Digi 3 Drop Mode: Landmark label									
Tree	1	2	3	4	5	6	7	8	9
<input checked="" type="checkbox"/> Flame_01_043	49	47	46	45	44	43	42	41	40
<input type="checkbox"/> Flame_01_044	48	46	45	44	43	42	41	40	39
<input type="checkbox"/> Flame_01_045	47	45	44	43	42	41	40	39	38
<input type="checkbox"/> Flame_01_046	46	44	43	42	41	40	39	38	37
<input checked="" type="checkbox"/> Flame_01_047	45	43	42	41	40	39	38	37	36
<input type="checkbox"/> Flame_01_048	44	42	41	40	39	38	37	36	35
<input type="checkbox"/> Flame_01_049	43	41	40	39	38	37	36	35	34
<input type="checkbox"/> Flame_01_050	42	40	39	38	37	36	35	34	33
<input type="checkbox"/> Flame_01_051	41	39	38	37	36	35	34	33	32
<input type="checkbox"/> Flame_01_052	40	38	37	36	35	34	33	32	31
<input type="checkbox"/> Flame_01_053	39	37	36	35	34	33	32	31	30
<input type="checkbox"/> Flame_01_054	38	36	35	34	33	32	31	30	29
<input type="checkbox"/> Flame_01_055	37	35	34	33	32	31	30	29	28
<input type="checkbox"/> Flame_01_056	36	34	33	32	31	30	29	28	27
<input type="checkbox"/> Flame_01_057	35	33	32	31	30	29	28	27	26
<input type="checkbox"/> Flame_01_058	34	32	31	30	29	28	27	26	25
<input type="checkbox"/> Flame_01_059	33	31	30	29	28	27	26	25	24
<input type="checkbox"/> Flame_01_060	32	30	29	28	27	26	25	24	23
<input type="checkbox"/> Flame_01_061	31	29	28	27	26	25	24	23	22
<input type="checkbox"/> Flame_01_062	30	28	27	26	25	24	23	22	21
<input type="checkbox"/> Flame_01_063	29	27	26	25	24	23	22	21	20
<input type="checkbox"/> Flame_01_064	28	26	25	24	23	22	21	20	19
<input type="checkbox"/> Flame_01_065	27	25	24	23	22	21	20	19	18
<input type="checkbox"/> Flame_01_066	26	24	23	22	21	20	19	18	17
<input type="checkbox"/> Flame_01_067	25	23	22	21	20	19	18	17	16
<input type="checkbox"/> Flame_01_068	24	22	21	20	19	18	17	16	15
<input type="checkbox"/> Flame_01_069	23	21	20	19	18	17	16	15	14
<input type="checkbox"/> Flame_01_070	22	20	19	18	17	16	15	14	13
<input type="checkbox"/> Flame_01_071	21	19	18	17	16	15	14	13	12
<input type="checkbox"/> Flame_01_072	20	18	17	16	15	14	13	12	11
<input type="checkbox"/> Flame_01_073	19	17	16	15	14	13	12	11	10
<input type="checkbox"/> Flame_01_074	18	16	15	14	13	12	11	10	9
<input type="checkbox"/> Flame_01_075	17	15	14	13	12	11	10	9	8
<input type="checkbox"/> Flame_01_076	16	14	13	12	11	10	9	8	7
<input type="checkbox"/> Flame_01_077	15	13	12	11	10	9	8	7	6
<input type="checkbox"/> Flame_01_078	14	12	11	10	9	8	7	6	5
<input type="checkbox"/> Flame_01_079	13	11	10	9	8	7	6	5	4
<input type="checkbox"/> Flame_01_080	12	10	9	8	7	6	5	4	3
<input type="checkbox"/> Flame_01_081	11	9	8	7	6	5	4	3	2

Camera Navigation



Digital Impression | Digital Treatment Planning



TOEPLITZ ET AL 1960



Diagram and oblique mode
Landmark Label

7101

75.57

18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Upper jaw
front (segments))

706

306

Fig. 58 A



Fig. 58 B

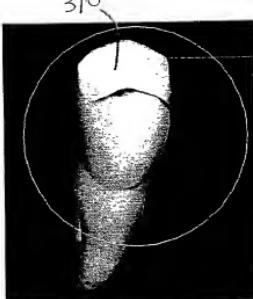


Fig.
58 C

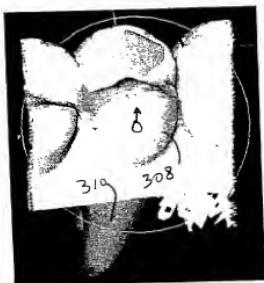


Fig. 58 D

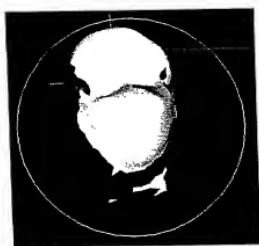
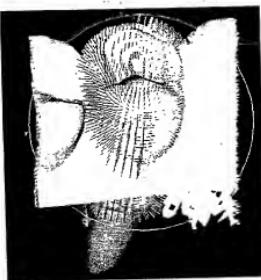
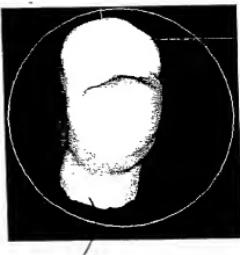


Fig. 58 E

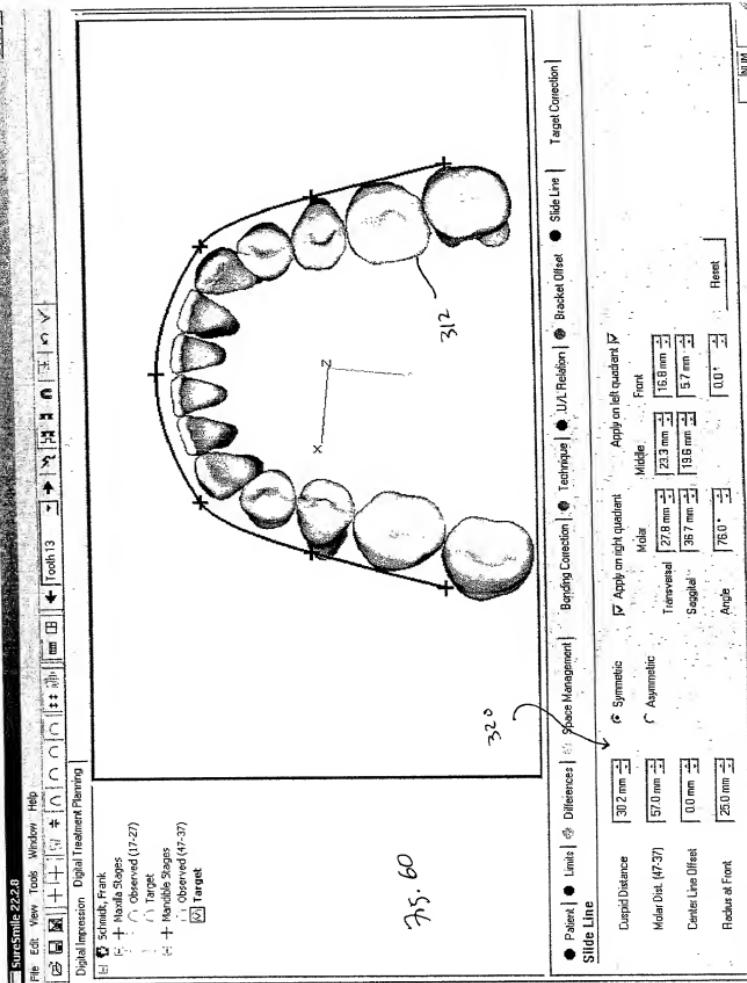


312 Fig. 58 F

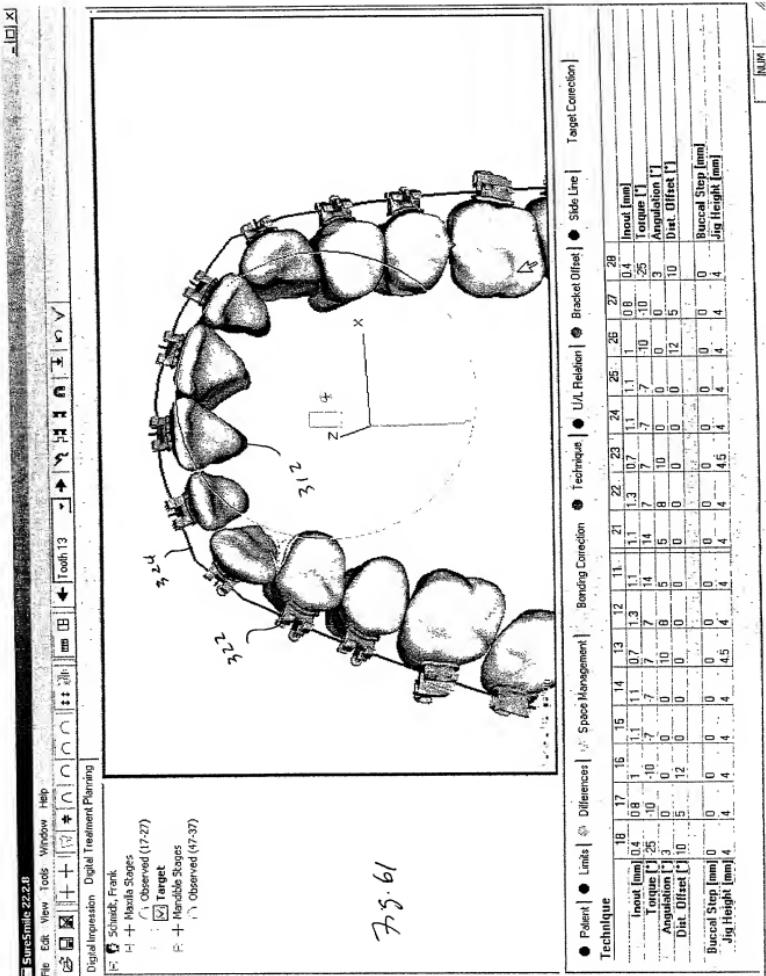
312

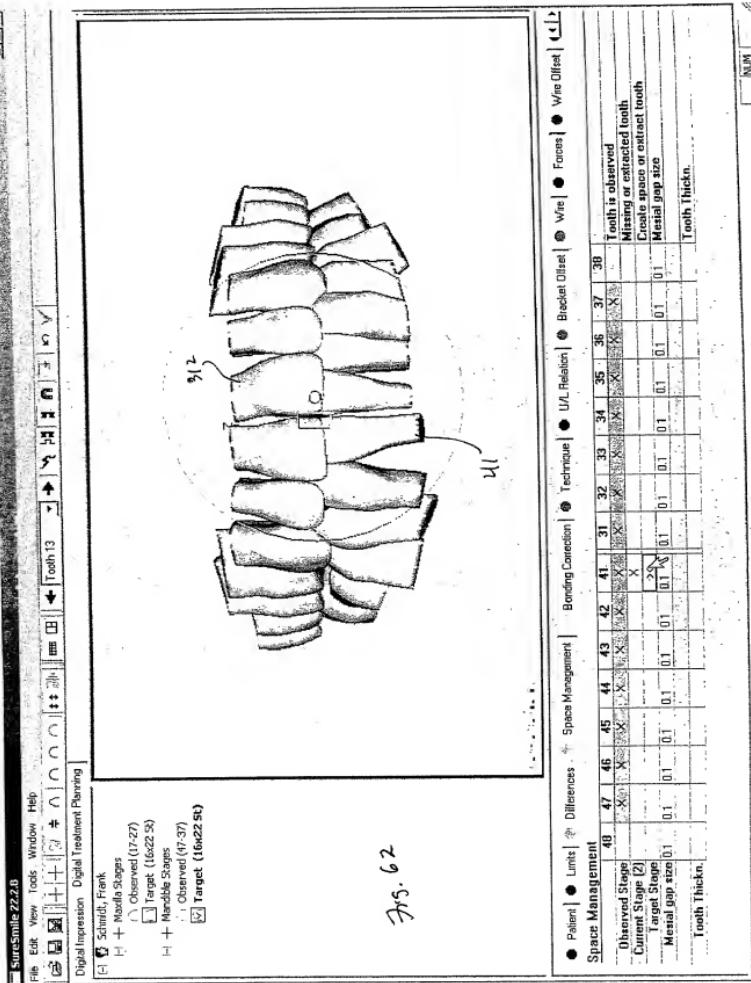


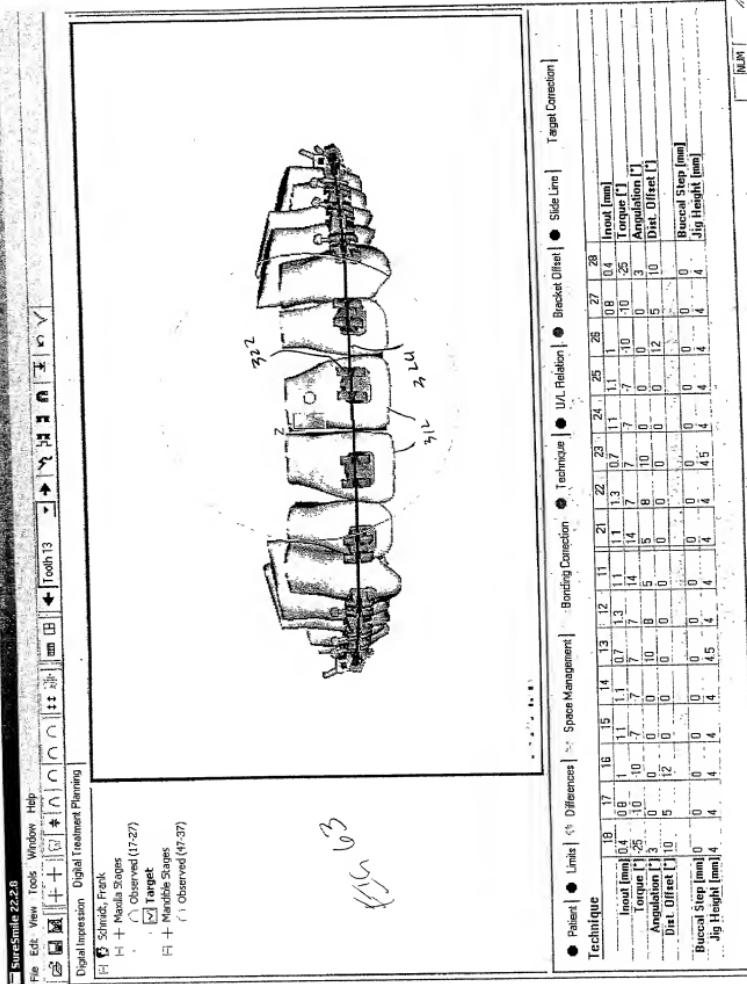
FIG. 59



For Help, press F1







For Help, press F1

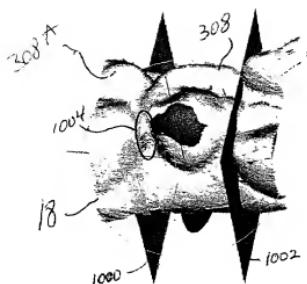


Fig. 64A

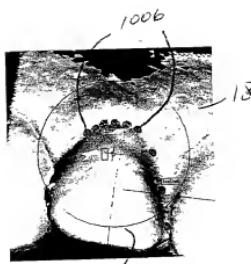


Fig. 64B 308

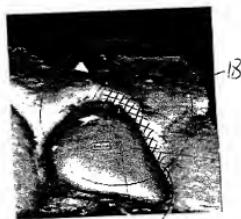


Fig. 64C

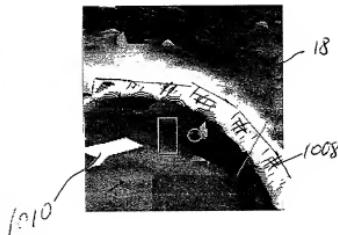


Fig. 64D

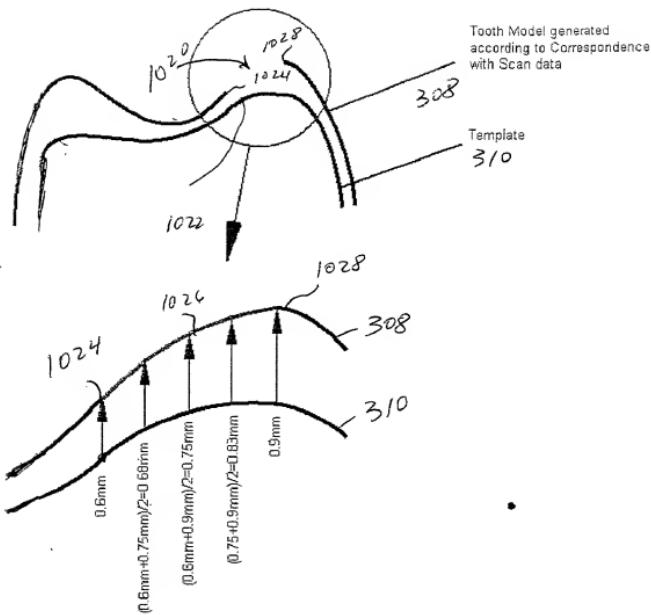


Fig. 65